FACT SHEET
NO: 18
Date: April 2015
Turf Queensland
Grow Green

Improving Soil Retention in Turfgrass Production:

The Benefits of Turfgrass Cover

How Soil Losses Occur

The two agents of soil movement are wind and water. In coastal areas, soil most commonly moves off-site in runoff water, following rainfall or irrigation. Risk factors for soil and nutrient loss in runoff are: saturated soils, large amounts of rain occurring in a short period of time, soil type (clays are more mobile than heavier sands), exposed earth, steep slopes and long slopes.

Benefits of retaining soil on farm:

- Soil lost due to erosion is normally valuable surface soil, with the structure, organic matter content and nutrients required for turfgrass growth and sustained production. It is difficult to replace.
- Shallow soils reduce the yields of high quality turf with good sod-strength.
- Repairing damaged slopes and unblocking drains and sediment traps is expensive.
- Costly fertilisers and agricultural chemicals are retained on farm.
- Sediment and nutrient loss also affects local waterways. In addition to causing environmental damage, producers can be exposed to the risk of litigation.

Full sod—What a difference!

- Turf mats protected exposed slopes almost instantly, even prior to rooting.
- Sod was **100 times** more effective in keeping soil in place than exposed soil during two high rainfall periods (100 mm and 90 mm).
- Sod retained around 19 tonnes/hectare of soil for each rainfall event.
- Where break-through erosion occurred the sod trapped sediment, minimising its travel down slope.

Wash area: tapering at 6.5 m, retaining soil and nutrients on the slope.

Producer Strategies to Protect Soil

- Sprig vulnerable slopes prior to intense rainfall periods (October to March in South East Queensland). Full slope protection can be achieved in around eight weeks for a modest net cost, with the product harvested during the cooler parts of the year.
- Steeper slopes require extra care to reduce the time that they are left unprotected throughout the summer rainfall period. On steep slopes, if possible, schedule harvesting and replanting away from intense rainfall periods to reduce sediment and nutrient movement in runoff water.
- Contour banks and turf strips left on the contour may also assist.

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Benefits of Turfgrass Cover

Fifty two days of soil loss after 427 mm of summer rainfall.

Bare earth	**Sprigged Area**	**Full sod**
60.5 tonnes/hectare lost	35.8 tonnes/hectare lost	only 0.55 tonnes/hectare lost
9.1 kg/ha phosphorus lost	3.2 kg/ha phosphorus lost	only 0.1 kg/ha phosphorus lost
		
		
Trough regularly filled with sediment	Sediment levels fell as ground cover increased.	Trough near empty
Extensive slope repair and re-levelling required	Herbicide was washed away, causing a breakdown in weed control	Slope well protected.

Every bit of turf cover helped:

		
11% ground cover 2.7 tonnes/ha soil saved following 87.5 mm rainfall	48% ground cover 3.5 tonnes/ha soil saved following 30.5 mm rainfall	86% ground cover 10 tonnes/ha soil saved following 119 mm rainfall

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